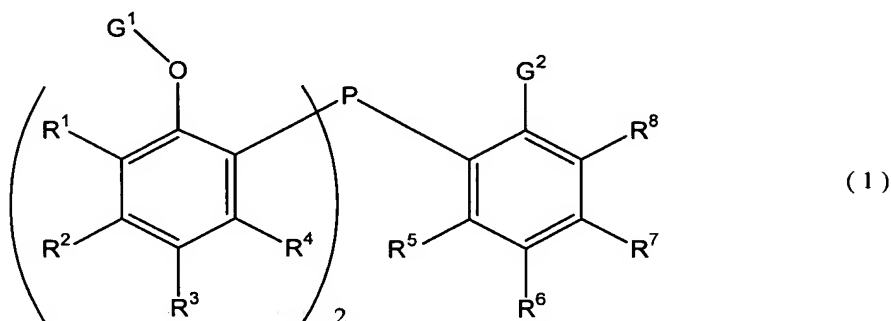


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A phosphine compound of formula (1):



wherein R¹, R², R³, R⁴, R⁶, R⁷ and R⁸ are the same or different, and independently represent,

a hydrogen atom,

a halogen atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms,

a silyl group substituted with a substituted or unsubstituted hydrocarbon having 1 to 20 carbon atom(s),

a substituted or unsubstituted alkoxy group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyloxy group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryloxy group having 6 to 20 carbon atoms, or

an amino group disubstituted with hydrocarbons having 1 to 20 carbon atom(s);

R⁵ represents,

a hydrogen atom,

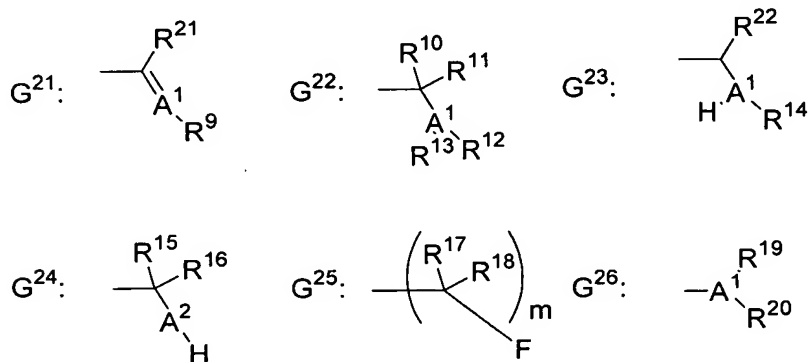
a fluorine atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,
 a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or
 a silyl group substituted with a substituted or unsubstituted hydrocarbon having 1 to 20 carbon atoms,

G^1 represents a hydrogen atom or a protective group of hydroxyl group;

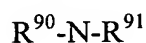
G^2 represents any one of G^{21} to G^{26} below,



wherein A^1 represents an element of Group 15 of the periodic table, and A^2 represents an element of Group 16 of the periodic table, and A^1 in G^{21} represents a nitrogen atom;

R^9 and R^{14} each represents

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),
 a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,
 a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or
 a group of formula:



wherein R^{90} and R^{91} are the same or different, and represent

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),
 a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,
 a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or
 a cyclic structure by being linked together,

R^{12} , R^{13} , R^{19} and R^{20} each independently represents,

a substituted or unsubstituted alkyl group 1 to 10,
 a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms; or
R¹² and R¹³, and R¹⁹ and R²⁰, each independently, are linked together and represent
cyclic structure,

R¹⁰, R¹¹, R¹⁵, R¹⁶, R²¹ and R²² each independently represents
a hydrogen atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms;

R¹⁷ and R¹⁸ are the same or different, and represent,

a hydrogen atom,

a halogen atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms; and

m represents an integer of 0 or 1.

2. (Original) The phosphine compound according to Claim 1, wherein A¹
represents a nitrogen atom and A² represents an oxygen group.

3. (Currently Amended) The phosphine compound according to Claim 1 ~~or 2~~,
wherein G¹ represents a hydrogen atom.

4. (Currently Amended) The phosphine compound according to Claim 1, ~~2 or 3~~,
wherein G² is G²¹.

5. (Currently Amended) The phosphine compound according to Claim 1, ~~2 or 3~~,
wherein G² is G²².

6. (Currently Amended) The phosphine compound according to Claim 1, ~~2 or 3~~,
wherein G² is G²³.

7. (Currently Amended) The phosphine compound according to Claim 1, ~~2 or 3~~, wherein G^2 is G^{24} .

8. (Currently Amended) The phosphine compound according to Claim 1, ~~2 or 3~~, wherein G^2 is G^{25} .

9. (Currently Amended) The phosphine compound according to Claim 1, ~~2 or 3~~, wherein G^2 is G^{26} .

10. (Currently Amended) The phosphine compound according to Claim 1 ~~or 2~~, wherein G^1 is a protective group of the hydroxyl group.

11. (Original) The phosphine compound according to Claim 10, wherein G^1 is a protective group of the hydroxyl group selected from an alkyl group having a secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group.

12. (Original) The phosphine compound according to Claim 10, wherein G^1 is a methoxymethyl group, an ethoxyethyl group, a methoxyethoxymethyl group, a trimethylsilylethoxymethyl group or a 1-ethoxyethyl group.

13. (Original) The phosphine compound according to Claim 10, wherein G^2 is G^{21} .

14. (Original) The phosphine compound according to Claim 10 or a Bronsted acid salt thereof, wherein G^2 is G^{22} .

15. (Original) The phosphine compound according to Claim 10 or a Bronsted acid salt thereof, wherein G^2 is G^{23} .

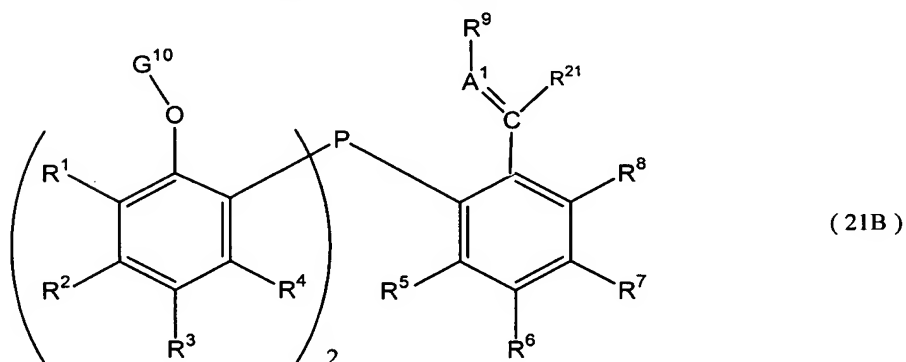
16. (Original) The phosphine compound according to Claim 10, wherein G^2 is G^{24} .

17. (Original) The phosphine compound according to Claim 10, wherein G^2 is G^{25} .

18. (Original) The phosphine compound according to Claim 10 or a Bronsted acid salt thereof, wherein G^2 is G^{26} .

19. (Currently Amended) The compound according to Claim 1 or 2, wherein R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} and R^{20} are substituted or unsubstituted alkyl groups having 1 to 10 carbon atom(s).

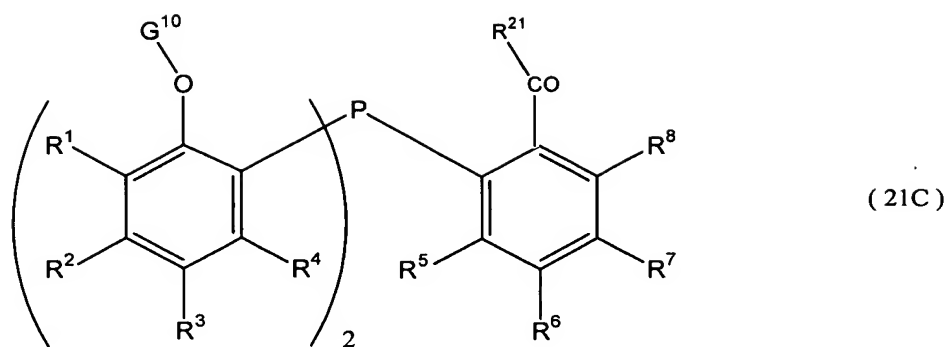
20. (Original) A production method of a phosphine compound of formula 21B:



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{21} , G^{10} and A^1 are the same as described below,

which comprise reacting

a phosphine carbonyl compound of formula (21C):



wherein G^{10} represents a hydrogen atom or a protective group of the hydroxyl group selected from alkyl groups having a secondary or tertiary carbon atom linked to an oxygen atom of phenol or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group,

R^1 , R^2 , R^3 , R^4 , R^6 and R^1 are the same or different and each independently represents a hydrogen atom,

a halogen atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms,

a silyl group substituted with a substituted or unsubstituted hydrocarbon having 1 to 20 carbon atom(s),

a substituted or unsubstituted alkoxy group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyloxy group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryloxy group having 6 to 20 carbon atoms, or

an amino group disubstituted with hydrocarbons having 1 to 20 carbon atom(s);

R^5 represents,

a hydrogen atom,

a fluorine atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or

a silyl group substituted with a substituted or unsubstituted hydrocarbon having 1 to 20 carbon atom(s);

R^{21} represents,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),
a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or
a substituted or unsubstituted aryl group having 6 to 20 carbon atoms,
with an organic compound of formula (21F):



wherein R^9 represents

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),
a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,
a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or
a group of formula:

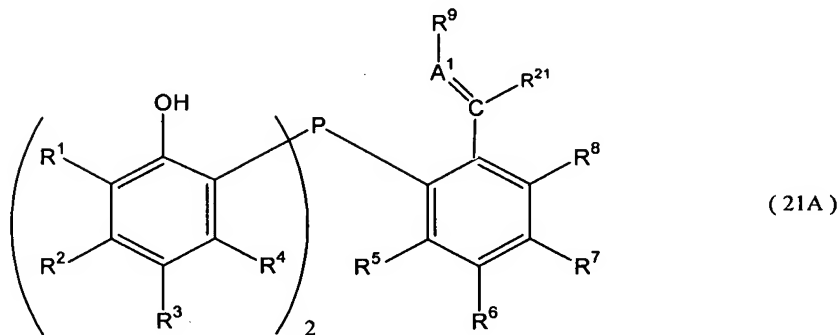


wherein R^{90} and R^{91} are the same or different and represent

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),
a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or
a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or
a cyclic structure being linked together.

21. (Original) The production method according to Claim 20, wherein G^{10} is a protective group of the hydroxyl group selected from alkyl groups having a secondary or tertiary alkyl groups linked to an oxygen atom of phenol, and a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group.

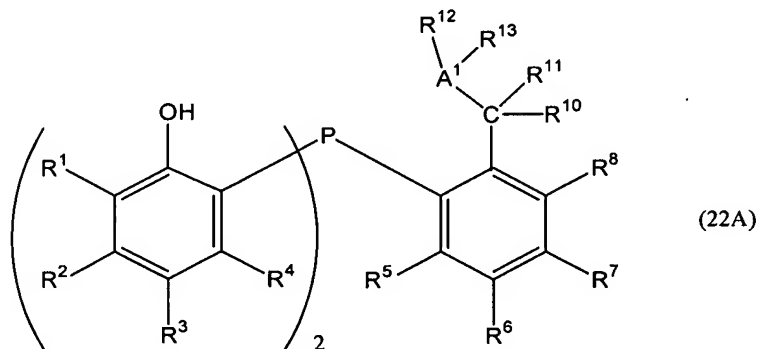
22. (Currently Amended) A production method of a phosphine compound of formula (21A):



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 and R^{21} are as defined in Claim 20, also which comprises reacting the phosphine compound (21B) as defined in Claim 20 with an acid:

23. (Original) The production method according to Claim 22, wherein the acid is hydrochloric acid.

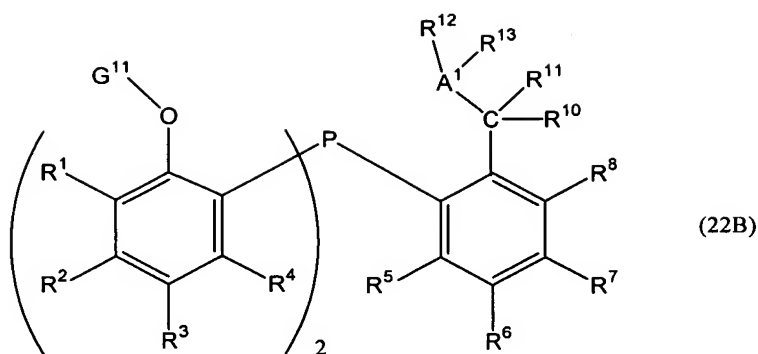
24. (Original) A production method of a phosphine compound of formula (22A):



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{10} , R^{11} , R^{12} , R^{13} , and A^1 are the same as described below,

which comprises reacting

a phosphine compound of formula (22B):



wherein A^1 , R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{10} , R^{11} , R^{12} and R^{13} are as defined in Claim 1, and

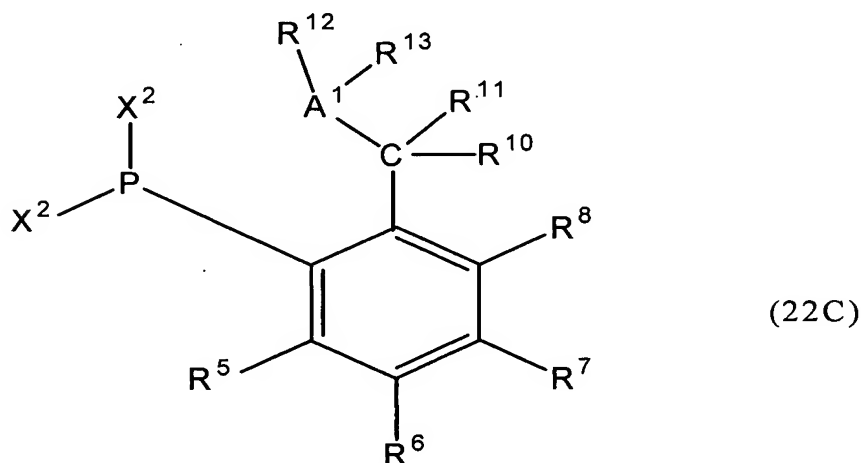
G^{11} represents a protective group of the hydroxyl group selected from alkyl groups having secondary or tertiary alkyl groups linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group, with an acid.

25. (Original) The production method according to Claim 24, wherein the acid is hydrochloric acid.

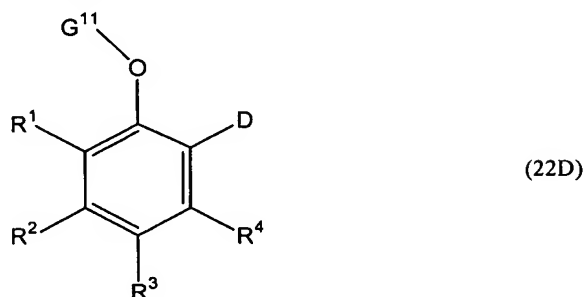
26. (Original) A production method of the phosphine compound of formula (22B) as defined in Claim 24,

which comprises reacting

a phosphine dihalide of formula (22C):



wherein R^5 , R^6 , R^7 , R^8 , R^{10} , R^{11} , R^{12} , R^{13} and A^1 are as defined in Claim 24, with a metal aryl compound of formula (22D):



wherein R^1 , R^2 , R^3 , R^4 and G^{11} are as defined in Claim 24, and

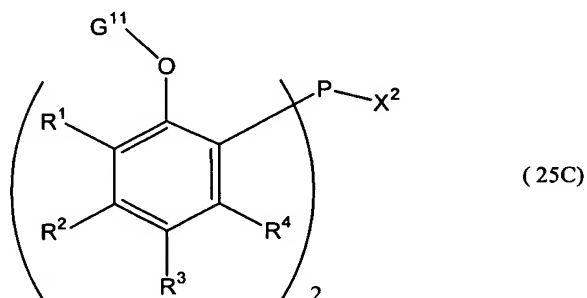
D represents an alkali metal or $J-X^3$:

wherein J represents an alkaline earth metal, and

X^3 represents a halogen atom.

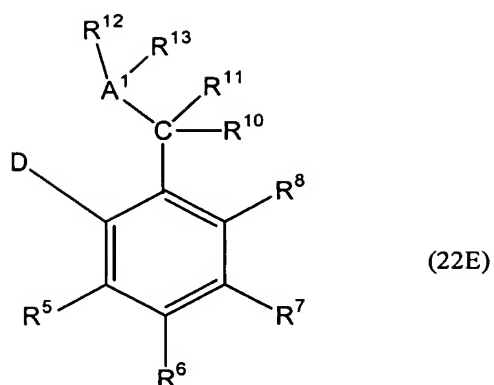
27. (Original) A production method of the compound of formula (22B) as defined in Claim 24, which comprises reacting

a phosphine halide compound of formula (25C):



wherein R^1 , R^2 , R^3 , R^4 and G^{11} are as defined in Claim 24 and X^2 represents a halogen atom,

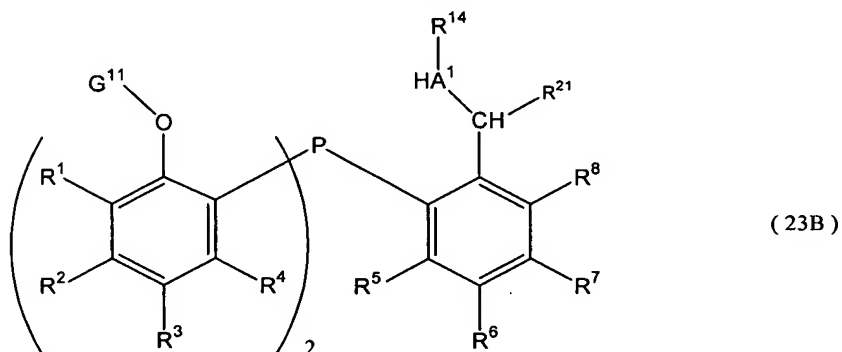
with a compound of formula (22E):



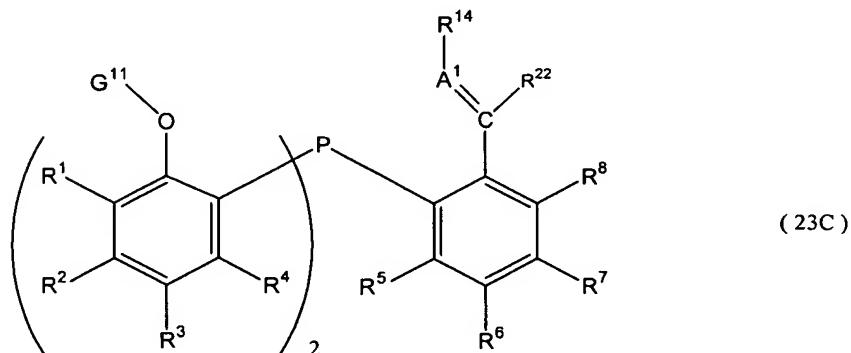
wherein R^5 , R^6 , R^7 , R^8 , R^{10} , R^{11} , R^{12} , R^{13} , A^1 and D are as defined in Claim 24.

28. (Original) The compound of formula 22B according to Claim 24, wherein R^5 is a hydrogen atom.

29. (Original) A production method of a phosphine compound of formula (23B):

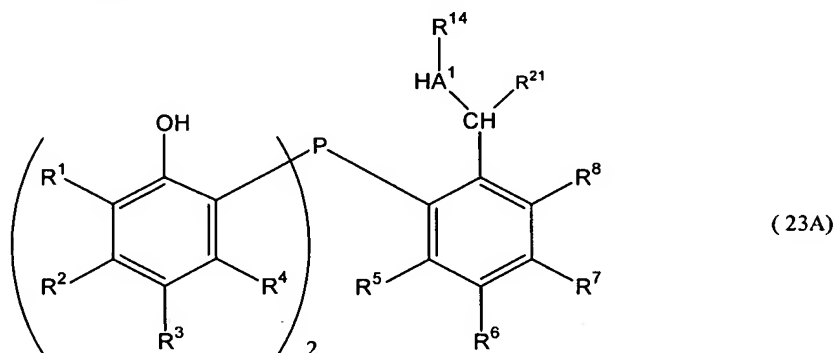


wherein R^1 , R^2 , R^2 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{14} , R^{21} , A^1 and G^{11} are as defined below,
which comprise reacting a phosphine compound of formula (23C):



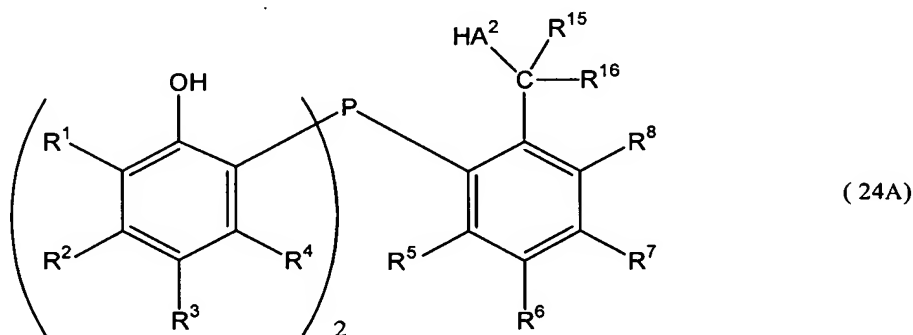
wherein A^1 , R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{14} and R^{21} are as defined in Claim 1, and G^{11} represents a protective group of the hydroxyl group selected from an alkyl group having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group, with a metal hydride compound.

30. (Original) A production method of a phosphine compound of formula (23A):

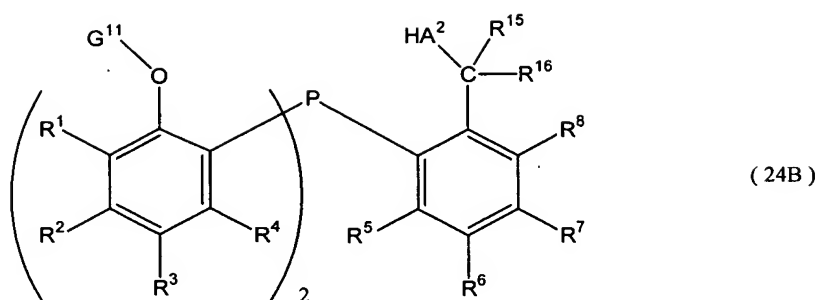


wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{14} , A^1 and R^{21} are as defined below, which comprises reacting the phosphine compound of formula (23B) as defined in Claim 29, with an acid:

31. (Original) A production method of a phosphine compound of formula (24A):

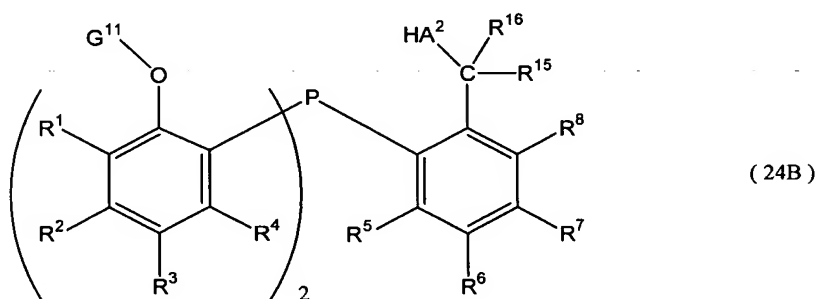


wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{15} , R^{16} , and A^2 are as defined in Claim 1, which comprises reacting the phosphine compound of formula (24B):

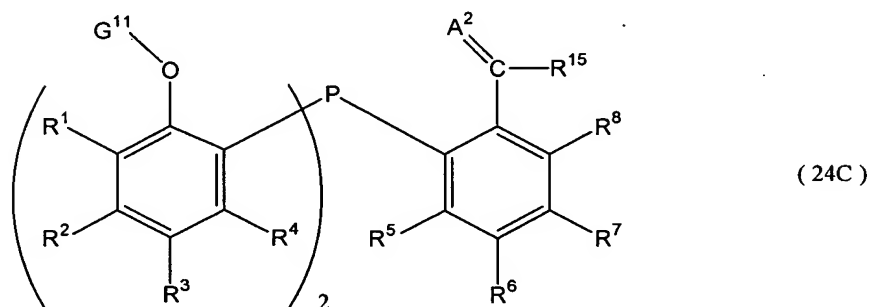


wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{15} , R^{16} and A^2 are the same as described above, and G^{11} represents a protective group of the hydroxyl group selected from alkyl groups having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl groups substituted with a substituted or unsubstituted alkoxy group, with an acid.

32. (Original) A production method of a phosphine compound of formula (24B):



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{15} , R^{16} and A^2 are as defined below,
which comprises reacting
a phosphine compound of formula (24C):



wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 and R^{15} are as defined in Claim 1, G^{11} represents a protective group of the hydroxyl group selected from an alkyl group having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl

group substituted with a substituted or unsubstituted alkoxy group, and A^2 represents an element of Group 16 of the periodic table,

with a metal hydride compound or a metal aryl compound of formula (24D):



wherein R^{16} is as defined in Claim 1, and

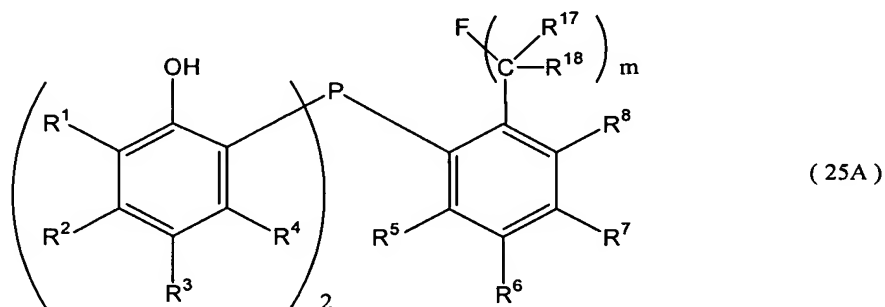
Y represents an alkali metal or $J-X^3$:

wherein J represents an alkaline earth metal, and

X^3 represents a halogen atom.

33. (Original) The production method according to Claim 32, wherein G^{11} represents a protective group of the hydroxyl group selected from alkyl groups having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl groups substituted with a substituted or unsubstituted alkoxy group, and A^2 represents an oxygen atom.

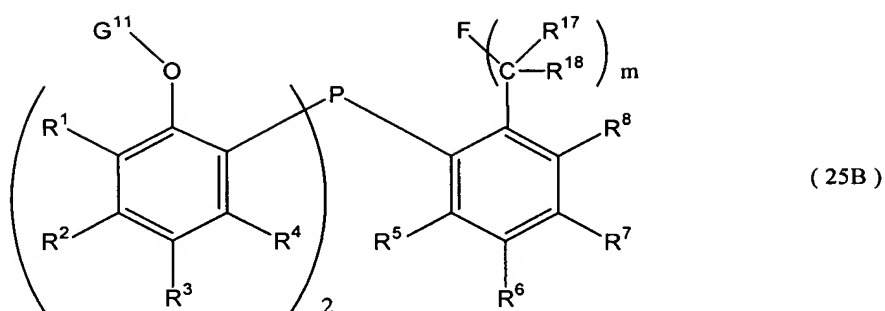
34. (Original) A production method of a phosphine compound of formula (25A):



wherein $R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^{17}, R^{18}$ and m are as defined in Claim 1,

which comprises reacting

the phosphine compound of formula (25B):

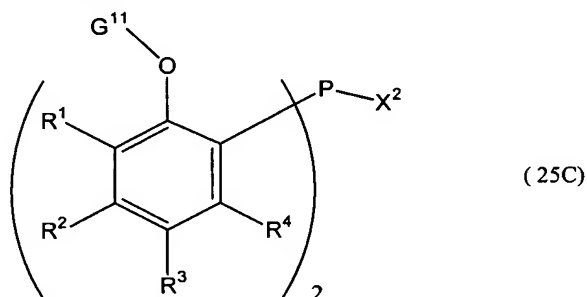


wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{17} , R^{18} and m are as defined above, and G^{11} represents a protective group of the hydroxyl group selected from alkyl groups having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group, with an acid.

35. (Original) A production method of a phosphine compound of formula (25B) as defined in Claim 34,

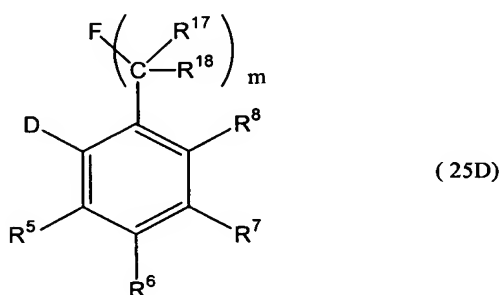
which comprises reacting

a phosphine halide compound of formula (25C):



wherein R^1 , R^2 , R^3 , R^4 and G^{11} are as defined in Claim 34, and X^2 represents a halogen atom,

with a metal aryl compound of formula (25D):



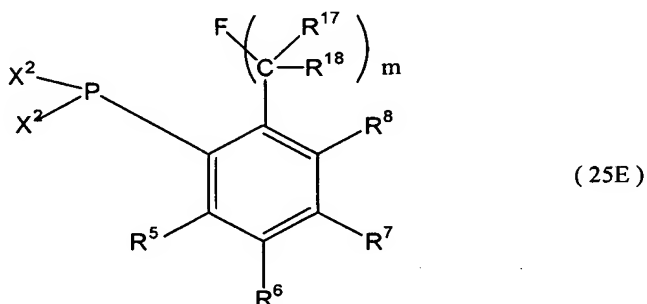
wherein R^5 , R^6 , R^7 , R^8 , R^{17} , R^{18} and m are as defined in Claim 34, and D represents an alkali metal or $J-X^3$,

wherein J represents an alkaline earth metal, and X^3 represents a halogen atom.

36. (Currently Amended) A production method of the phosphine compound of formula (25B) as defined Claim 1,

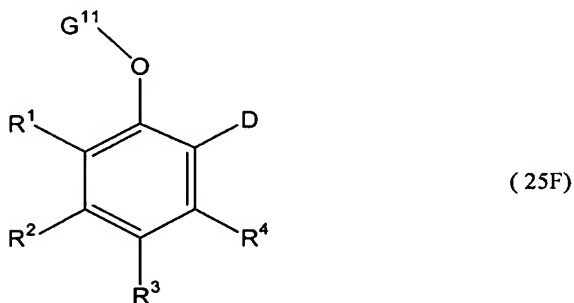
which comprises reacting

a halophosphine compound of formula (25E)



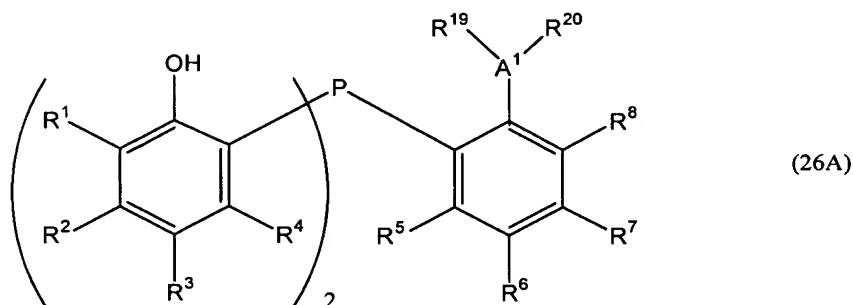
wherein R^5 , R^6 , R^7 , R^8 , R^{17} , R^{18} and m ~~are the same as those according to Claim 1,~~
and X^2 represents a halogen atom,

with a metal aryl compound of formula (25F):

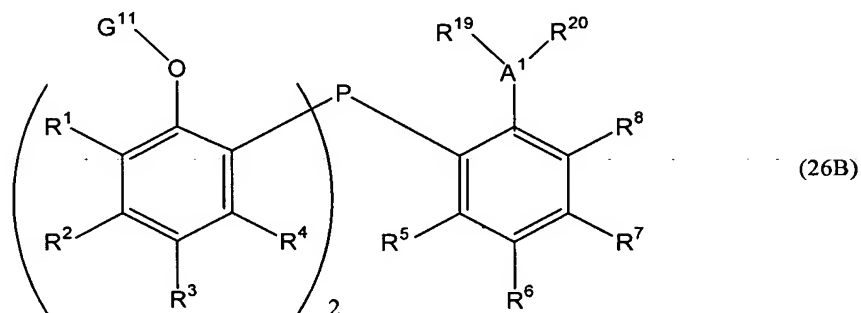


R^1 , R^2 , R^3 and R^4 are as defined in Claim 1, and G^{11} represents a protective group of the hydroxyl group selected from an alkyl group having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group.

37. (Original) A production method of a phosphine compound of formula (26A):

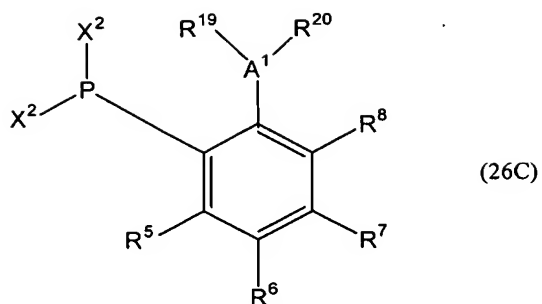


wherein A^1 , R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{19} and R^{20} are as defined below,
which comprises reacting
a phosphine compound of formula (26B):



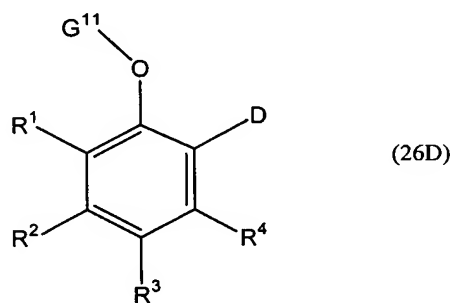
wherein R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^{19} , R^{20} and A^1 are as defined in Claim 1, and G^{11} represents a protective group of the hydroxyl group selected from alkyl groups having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group,
with an acid:

38. (Original) A production method of the phosphine compound of formula (26B) as defined in Claim 37,
which comprises reacting
a halophosphine compound of formula (26C):



wherein R^5 , R^6 , R^7 , R^8 , R^{19} , R^{20} and A^1 are as defined in Claim 37, and X^2 represents a halogen atom,

with a metal aryl compound of formula (26D):



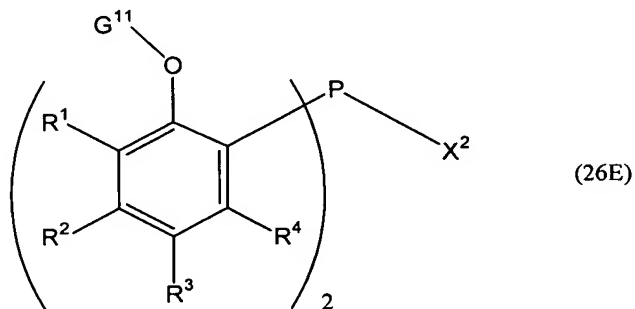
wherein R^1 , R^2 , R^3 , R^4 and G^{11} are the same as those described in Claim 37, and D represents an alkali metal or $J-X^3$,

wherein J represents an alkaline earth metal, and X^3 represents a halogen atom.

39. (Original) A production method of a phosphine compound of formula (26B) as defined in Claim 38,

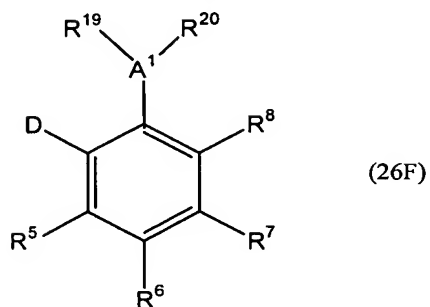
which comprises reacting

an aryl-halogenated phosphorous compound of formula(26E):



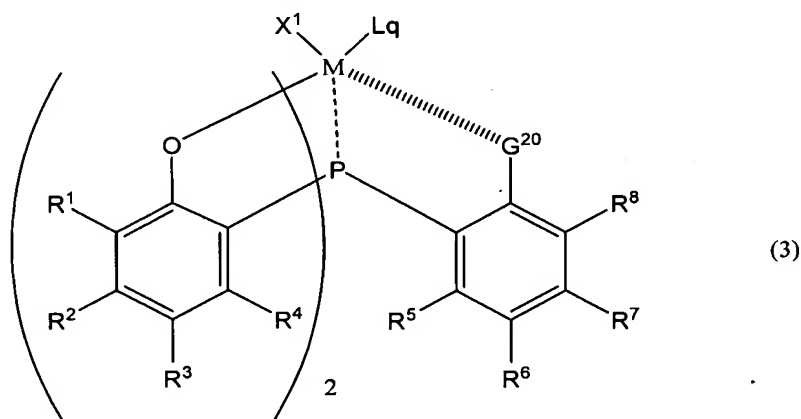
wherein R^1 , R^2 , R^3 , R^4 and G^{11} are as defined in Claim 38, and X^2 represents a halogen atom,

with a metal aryl compound of formula (26F):



wherein A^1 , R^5 , R^6 , R^7 , R^8 , R^{19} , R^{20} and D are as defined in Claim 38.

40. (Original) A production method of a transition metal complex of formula (3):

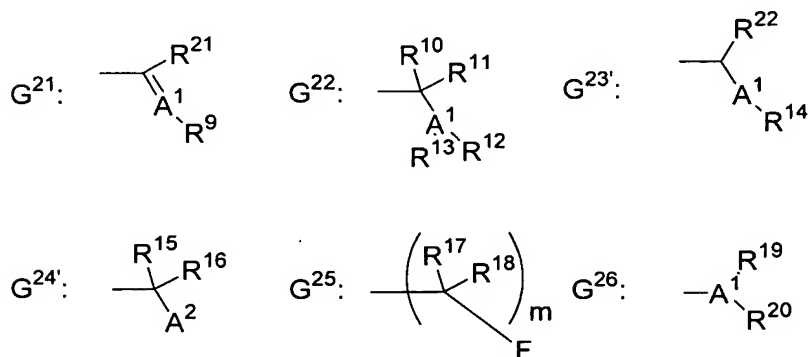


wherein M represents an element of Group 14 of the periodic table,

R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , X^1 and L are as defined below,

q represents an integer of 0 or 1,

G^{20} represents any one of G^{21} to G^{26} ,



wherein A^1 represents an element of Group 15 of the periodic table,

provided that A¹ in G^{23'} represents an anion of an element of Group 15 of the periodic table and A¹ in G²¹ represents a nitrogen atom,

A² represents an element of Group 16 of the periodic table,

R⁹ and R¹⁴ each represents,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or

R⁹⁰-N-R⁹¹;

wherein R⁹⁰ and R⁹¹ are the same or different and represent

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 10 carbon atoms,

a substituted or unsubstituted aryl group having 6 to 10 carbon atoms, or

a ring structure by being linked together;

R¹², R¹³, R¹⁹ and R²⁰ each independently represents

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms, or

R¹² and R¹³, and R¹⁹ and R²⁰ each independently represents a ring structure by being linked together;

R¹⁰, R¹¹, R¹⁵ and R¹⁶, R²¹ and R²² each independently represent

a hydrogen atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms;

R¹⁷ and R¹⁸ are different one another, and represent

a hydrogen atom,

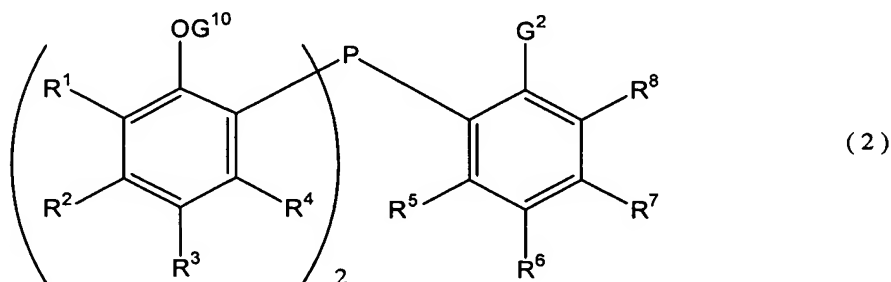
a halogen atom,

a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),

a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms, or

a substituted or unsubstituted aryl group having 6 to 20 carbon atoms,

m represents an integer of 0 or 1, and
 the line linking M and G²⁰ represents that M is linked or coordinated to an element of
 Group 15 or 16 of the periodic table or to a fluorine atom constituting G²⁰,
 which comprises reacting
 a phosphine compound of formula (2):



wherein R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸ and G² are as defined in Claim 1, and G¹⁰
 represents a protective group of the hydroxyl group selected from alkyl groups having
 secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl
 groups substituted with a substituted or unsubstituted alkoxy group,
 with a transition metal compound of formula (4):



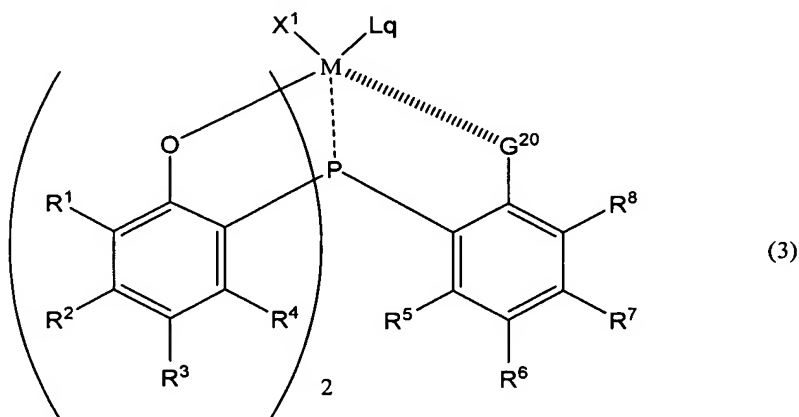
wherein M represents an element of Group 4 of the periodic table,
 X¹ represents,
 a substituted or unsubstituted alkyl group having 1 to 10 carbon atom(s),
 a substituted or unsubstituted aralkyl group having 7 to 20 carbon atoms,
 a substituted or unsubstituted aryl group having 6 to 20 carbon atoms,
 a substituted or unsubstituted alkoxy group having 1 to 10 carbon atom(s),
 a substituted or unsubstituted aralkoxy group having 7 to 10 carbon atoms,
 a substituted or unsubstituted aryloxy group having 6 to 10 carbon atoms, or
 an amino group disubstituted with hydrocarbons having 2 to 20 carbon atoms; and
 L represents a balancing counter ion or neutral ligand, being an atom or group similar
 to X¹, and is bonding or coordinating to metal M,
 L¹ represents a neutral ligand, and p represents an integer of 0 to 2.

41. (Original) The method according to Claim 40, a base is used.
42. (Original) The method according to Claim 41, wherein G^{10} is a hydrogen atom.
43. (Original) A production method of the transition metal compound of formula (3) according to Claim 40, wherein G^{10} is a protective group of the hydroxyl group selected from alkyl groups having secondary or tertiary carbon atom linked to an oxygen atom of phenol, or a C1 to C2 alkyl group substituted with a substituted or unsubstituted alkoxy group.
44. (Original) The production method according to Claim 43, wherein G^{10} is a methoxymethyl group, an ethoxyethyl group, a methoxyethoxymethyl group, trimethylsilylethoxymethyl group or 1-ethoxyethyl group.
45. (Currently Amended) The production method according to Claim 40, ~~41, 42, 43 or 44~~, wherein M is a titanium atom or a zirconium atom.
46. (Original) The production method of the transition metal complex according to Claim 45, wherein A^1 represents a nitrogen atom and A^2 represented an oxygen atom.
47. (Original) The production method of the transition metal complex according to Claim 46, wherein G^2 is G^{21} .
48. (Original) The production method of the transition metal complex according to Claim 46, wherein G^2 is G^{22} .
49. (Original) The production method of the transition metal complex according to Claim 46, wherein G^2 is G^{23} .
50. (Original) The production method of the transition metal complex according to Claim 46, wherein G^2 is G^{24} .

51. (Original) The production method of the transition metal complex according to Claim 46, wherein G^2 is G^{25} .

52. (Original) The production method of the transition metal complex according to Claim 46, wherein G^2 is G^{26} .

53. (Original) The transition metal complex of formula (3):



wherein M, L, X^1 , R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , q and G^{20} are as defined in Claim 40.

54. (Original) The transition metal complex according to Claim 53, wherein A^1 represent a nitrogen atom and A^2 represents an oxygen atom.

55. (Original) The transition metal complex according to Claim 54, wherein M is a titanium atom or a zirconium atom.

56. (Currently Amended) The transition metal complex according to Claim 54 ~~or 55~~, wherein G^2 is G^{21} .

57. (Currently Amended) The transition metal complex according to Claim 54 ~~or 55~~, wherein G^2 is G^{22} .

58. (Currently Amended) The transition metal complex according to Claim 54 ~~or 55~~, wherein G^2 is G^{23} .

59. (Currently Amended) The transition metal complex according to Claim 54 ~~or 55~~, wherein G^2 is G^{24} .

60. (Currently Amended) The transition metal complex according to Claim 54 ~~or 55~~, wherein G^2 is G^{25} .

61. (Currently Amended) The transition metal complex according to Claim 54 ~~or 55~~, wherein G^2 is G^{26} .

62. (Currently Amended) An olefin polymerization catalyst comprising a combination of transition metal complex according to Claim 53, ~~54 or 55~~, compound A below, and optionally compound B:

compound A: any one of compounds A1 to A3, or a mixture of at least two of them,

compound A1: an organic aluminum compound of formula $(E1)_aAl(Z)_{3-a}$,

compound A2: a cyclic aluminosiloxane having a structure of formula $[-Al(E2)-O-]_b$, and

compound A3: a linear aluminosiloxane of formula $E3[-AlE3-O-]_cAlE3_2$,

wherein E1 to E3 are the same or different and each represents a hydrocarbon group having 1 to 8 carbon atom(s),

Z is the same or different, and represents a hydrogen atom or a halogen atom,

c represents 1, 2 or 3,

b represents an integer of 2 or more, and

c represents an integer of 1 or more;

compound B: any one of compounds B1 to B3, or a mixture of at least two of them,

compound B1: a boron compound of formula $BQ^1Q^2Q^3$,

compound B2: a boron compound of formula $Z^+(BQ^1Q^2Q^3Q^4)^-$, and

compound B3: a boron compound of formula $(L-H)^+(BQ^1Q^2Q^3Q^4)^-$,

wherein B is a boron atom of a trivalent state, and

Q^1 to Q^4 are the same or different and represent a halogen atom, a hydrocarbon group having 1 to 20 carbon atom(s), a halogenated hydrocarbon group having 1 to 20 carbon atom(s), a silyl group substituted with the hydrocarbon groups having 1 to 20 carbon atom(s), or an amino group disubstituted with the hydrocarbon groups having 1 to 20 carbon atom(s) “ Z^+ represents an inorganic or organic cation, and (L-H) represents Brønsted acid”.

63. (Original) A production method of an olefin polymer, which comprises polymerizing an olefin in the presence of the olefin polymerization catalyst according to Claim 62.